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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/669,205

09/24/2003

Sarah E. Kim

ITL.1040US (P14807)

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21906

7590

12/01/2004

TROP PRUNER & HU, PC
8554 KATY FREEWAY
SUITE 100
HOUSTON, TX 77024

EXAMINER

ISAAC, STANETTA D

ART UNIT

PAPER NUMBER

2812

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/669,205

Applicant(s)

KIM ET AL.

Examiner

Stanetta D. Isaac

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 14-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6,7,14 and 16 is/are rejected.
- 7) ☒ Claim(s) 3-5,15 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


LYNNE A. GURLEY

PRIMARY PATENT EXAMINER

TC 2800, AU 2812

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/8/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the amendment filed on 9/13/04. Currently, claims 1-7 and 14-17 are pending.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 8/8/04. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 6, 7, 14 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Jankowski et al. Patent Application Publication US 2004/0072039.

3. Jankowski discloses the semiconductor method as claimed. See figures 1-11, and corresponding text, where Jankowski teaches a method comprising: forming a trench in each of two semiconductor substrates (figures 5 and 9; paragraphs [0023] and [0025]); providing a

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catalyst 904 in the trench (figure 9; paragraph [0044]); and combining said substrates in a face-to-face abutment with said trenches in alignment with one another (figure 9; paragraph [0029]).

4. Pertaining to claim 2, Jankowski teaches the method including forming a channel 920/922 that communicates from opposed ends of each trench to the edge of each substrate to allow fluid to circulate through the substrates via channels and the trenches (figure 9; paragraphs [0029] and [0044]).

5. Pertaining to claim 6, Jankowski teaches the method including depositing the catalyst in the trench (figure 9; paragraph [0044]).

6. Pertaining to claim 7, Jankowski teaches the method including depositing platinum or lead in said trench (figure 9; paragraph [0045] platinum).

7. Pertaining to claim 14, Jankowski teaches the method comprising: forming a trench in an integrated circuit substrate (figures 5 and 9; paragraphs [0023] and [0025]); lining the trench with a catalyst material to remove gases from a circulating fluid (figure 9; paragraph [0044-0045]); forming channels that align with said trench to allow fluid circulation across said substrate and through said trench (paragraphs [0029 and [0044-0045]).

8. Pertaining to claim 16, Jankowski teaches the method including depositing platinum as said catalyst in said trench (paragraph [0045]).

Allowable Subject Matter

9. Claims 3-5, 15 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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10. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art of record, fails to show, combining the substrates using copper-to-copper bonding that includes masking the catalyst to avoid coating the catalyst with the copper, and lifting off the resist to remove the copper from the catalyst. In addition, the closest prior art of record fails to show, protecting the catalyst when forming the channels. Finally, the closest prior art of record fails to show, depositing lead in the trench of the catalyst.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stanetta D. Isaac whose telephone number is 571-272-1671. The examiner can normally be reached on Monday-Friday 9:30am -6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on 571-272-1679. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stanetta Isaac
Patent Examiner
November 19, 2004


LYNNE A. GURLEY
PRIMARY PATENT EXAMINER
TC 2800, AU 2812